

What is claimed is:

1. A radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
2. A radio frequency filter according to claim 1, comprising a plurality of shunt acoustic resonators each arranged to resonate generally at the reject frequency band and a plurality of series acoustic resonators each arranged to anti-resonant generally at the reject frequency band, the shunt and series acoustic resonators being arranged in a ladder configuration.
3. A radio frequency band reject filter according to claim 1, wherein the shunt and series acoustic resonators are each formed as an array of a plurality of serially and parallel connected resonators.
4. A radio frequency filter according to claim 2, wherein the acoustic resonators are one port devices.
5. A radio frequency filter according to claim 2, wherein the acoustic resonators are surface acoustic wave resonators.
6. A radio frequency filter according to claim 2, wherein the acoustic resonators are thin film bulk acoustic resonators.
7. A radio frequency filter according to claim 2, further including a high Q matching network arranged to reduce the apparent capacitance of the filter outside the reject frequency band.
8. A base station power amplifier for a cellular radio network, the power amplifier including at least one inter-stage band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.

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9. A power amplifier filter according to claim 8, wherein the acoustic resonators are one port devices.
- 5 10. A power amplifier according to claim 8, wherein the acoustic resonators are surface acoustic wave resonators.
- 10 11. A power amplifier filter according to claim 8, wherein the acoustic resonators are thin film bulk acoustic resonators.
12. A duplexer for a mobile telephone handset including an radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
- 15 13. A duplexer according to claim 12, wherein the acoustic resonators are one port devices.
- 20 14. A duplexer according to claim 12, wherein the acoustic resonators are surface acoustic wave resonators.
15. A duplexer according to claim 12, wherein the acoustic resonators are thin film bulk acoustic resonators
- 25 16. A low noise amplifier input stage including a band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.
- 30 17. An input stage according to claim 16, wherein the acoustic resonators are one port devices.
- 35 18. An input stage according to claim 16, wherein the acoustic resonators are surface acoustic wave resonators.

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19. An input stage according to claim 16, wherein the acoustic resonators are thin film bulk acoustic resonators.

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